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LEWIS: Okay, my name is David G. Lewis. It is the first of March, 2006. I am conducting an interview with Ken Blackmore. Mr. Blackmore, do you give consent to this oral interview?

BLACKMORE: Oh, yes.

LEWIS: Just to start off, we're going to be doing some basic questions concerning your personal history. Your full name, sir?

BLACKMORE: Kenneth A.E. Blackmore.

LEWIS: And your birth year and place of birth?

BLACKMORE: March the twenty-seventh, 1923, Coventry, England.

LEWIS: What were your childhood experiences like?

BLACKMORE: They were very good, actually. My father was very good. I used to build model airplanes. Both my parents were supportive. I've seen families where they're not supportive, and their kids are just treated like a pet almost. They don't take an interest in what their kids are doing; mine were very supportive. After World War I, my father was in India and France. When he got out of the Royal Flying Corps he decided to start a business, and in those days the radio business was the up and coming thing. He got a license from Marconi – you had to do that before you could manufacture radios – and he started manufacturing radios in Coventry. He started off with a little manufacturing place – cabinet makers, big old horns on top – and it became successful. He had a big store downtown and then several other stores in the thirties. The government at the time was very oppressive in its taxation methods. Operating these stores, after he had paid the manager and all the redundancy funds, and the health benefits, and everything else – it didn't pay. So he just closed everything down and kept the one big store going downtown with mostly family people and a few other technicians.

That went on pretty well until the war, of course. During the war we got bombed out. It was a three story building. I remember that one night… What he did was he got a boiler – we had service shops in the back – he got a big boiler and buried it in the ground and put all his valuable stock in the ground. Then that one night the Germans dropped a bunch of incendiary bombs and melted everything, all the plastic had melted, and it blew the back part off the building – the bombs did. Out front – a bomb dropped right out front – and the blast went upwards. It had big bay windows in the front brick building. It blew those windows out and laid them on the floor without breaking the glass. Isn't that amazing? Anyway, that's beside the point… we probably diverged here.

LEIWS: Well, not exactly. Part of this is we need a history of yourself.

BLACKMORE: A profile?

LEWIS: Kind of a personal profile because your input in GP has a lot to do with your own background, too.

BLACKMORE: Back to GP then?

LEWIS: For instance, in your family, is the emphasis more on work or education, would you say?

BLACKMORE: Well, both. My mother was very active, she was the business brains. My father was very technical. She more did the bookkeeping. My father did more the technical side of the business. I went to college in England, right in Coventry. After I got out I started to work in the family business. As the war progressed, I joined the Air Force, and that's the rest of the story.

LEWIS: In terms of living conditions, were you…

BLACKMORE: [Laughs] Well, I'll tell you, we had a very nice country home. We had servants. I remember the names of some of them: Mr. Binns the butler, Mrs. Dickenson the housekeeper, the cook, and two maids. In those days that was the way things were, with people going up socially. During the war of course all of these people disappeared because they could get jobs in the factories, and they didn't want to do that kind of work anymore. We had a nice country home just outside Coventry. Nice place. It had a tennis court out front, conservatory, horse stables in the back. Really a pretty nice life – until the bombing started, of course.

Of course I left England after the war and came to this country. I got all my licenses to fly all single- and multi-engine planes – commercial. I had two job offers with two airlines in Seattle – I think Western Airlines was one of them; I can't remember what the other was. So I came over here, and they said, "Oh, we can't accept these licenses. You have to get new ones." So I had to go through all this rigmarole with CAA licenses, private and commercial – a lot of expense and a lot of time. So that was all done. So then I went down to Seattle to Boeing Field to start work, and they said, "Oh, by the way, just go over to the office over there and get your communications license to operate the radio." I went in there: "Oh, you can't have one – you're not a citizen." "I'm not going to be a citizen for five years…" Just like that, after all that expense. So what I did was… I got passage back to England on the Queen Mary. As soon as my in-laws heard about that – of course, we had a new baby – oh, they were horrified. My father-in-law was Judge Dawson. Remember him, a Superior Court judge?

LEWIS: Not familiar, no.

BLACKMORE: He was a major in the army during the war, but they kept him on as a Superior Court judge. He was judge for twenty-five years. Anyway, they talked us out of going back. What do I do for a living? I've got to have money to live, and money is dwindling. So I got a job out at a place you never heard of: Larson Mill.

LEWIS: No.

BLACKMORE: Do you know were Donovan Park is?

LEWIS: Yes.

BLACKMORE: Out on Electric Avenue? That was Larson Mill. A very big mill there: it had a shingle mill and a saw mill. Well, I got a job there doing electrical work, changed a lot of the steam-driven equipment to electric. That job went on for a while and that ran out, so then they said, "How would you like a job as a saw filer?" [Laughing] Well, I'm an engineer, but doing saw filing? So they gave me a job in the head rig. Have you ever been in a big saw mill where they have great giant band saws?

LEWIS: I took a tour of the GP plant, but most of the equipment is already out of there.

BLACKMORE: Yeah, well, that's not like that at all. They have this giant saw. They bring logs in; they are floated down the lake. They saw them into slabs. Then the [slabs] go through a gang saw – it's a bunch of blades up and down like this [gesturing in an up and down motion].

LEWIS: Okay, I've seen that before.

BLACKMORE: And it saws them into rough-dimension lumber. My job was to sharpen the gang saws on two of the machines. Not much future in that really… so that job petered out.

LEWIS: Sounds dangerous.

BLACKMORE: Not really. Well, it's dangerous if the giant band saw breaks… Of course, it's welded. If that breaks, it destroys everything. That didn't happen while I was there.

LEWIS: Oh right, thank God.

BLACKMORE: Anyway, let's see now. So then that job ran out. I talked to somebody down at the pulp mill – that's Puget Sound Pulp and Timber then – and it was a very family-oriented family type mill. Everybody knew everybody – locally owned, you know.

LEWIS: Do you know what year that was?

BLACKMORE: 1947. I was offered a job in the testing lab, but it wouldn't be available for a month. "Would you like to work in the yard?" That's labor, common labor. So I worked in the yard, and I was digging ditches and unloading railcars of corrosive chemicals, climbing into the steam plant boilers and scraping the grate, all that real labor. Then I got into the testing lab: pulp testing, routine testing, shift work. And then I got into the analytical. Analytical in those days was not like nowadays. Nowadays they put a sample in the mass spectrometer and out come the answers… asbestos filters and chain-o-matic balances. They were advanced; you had to pull the weights on to weigh [things]. And we had a calculator – it was a Monromatic – Monromatic is a mechanical calculator. It goes, "Chug, chug, chug, chug, chug."

LEWIS: How big is that?

BLACKMORE: It's about this big [makes brief hand gesture]. Anyway, it's before anything electronic. And slide rules… you used slide rules. And in the analytical, I saw areas which could be improved. I mean, some people just settle down to the job and do the job and that's it; they don't think any further. In one particular instance… when you're making pulp, there are different grades going through, and running four or five hundred tons a day at four or five hundred dollars a ton is a lot of money. Dissolving grade pulps are used in plastics and various other applications. Alpha cellulose is that component which is resistant to certain chemical treatments, like seventeen and a half percent sodium hydroxide under certain test conditions. The test took twenty-four hours. Well, they needed to test this so they adjust the chemical flows at different stages of treatment to get desired alpha levels. Meanwhile, you have a whole bunch of pulp gone through, yet you don't know what quality it is until after it's all through there and baled. That's potentially very expensive – that's what they call half prime. That's not suitable for the intended purpose, so you had to sell it cheaper. Being the mechanical guy I was, I devised a method whereby I could get that same answer in twenty minutes instead of twenty-four hours. I got the Shibley award for scientific achievement that year – this balance I made, and things like that, and do the same test.

LEWIS: And what year? That was in '55?

BLACKMORE: What it says, yeah. I got the Shibley award that year for doing that and saved the company a lot of money, so then I went into Research and Development.

LEWIS: Is that like a promotion?

BLACKMORE: Oh, yeah!

LEWIS: For your obvious work?

BLACKMORE: Oh, yeah, oh sure. I mean, you're developing new products and plant designs. At that time we didn't have a bleach plant… well, no, I'm backwards here… we did have a bleach plant. I skipped a whole area there. Anyway, at the time we were building a mill in conjunction with Rayonier Pulp Mill to be built in Ketchikan, Alaska, for making one hundred percent dissolving grade pulp, so we did pilot plant work. I was working in the pilot plant – a small-scale pulp mill – to decide what conditions were necessary… what pulping conditions, what bleaching conditions, wood species, everything to make the right quality pulp that Rayonier wanted for their end use. We set up this pilot plant and did all the tests and established what kind of pulping process was necessary and… we had one problem. They built a dam up there to have a water supply, and they left the trees standing, and the trees contaminated the water, so they had to put a water treatment plant in there that they didn't anticipate would be necessary. So then we designed this plant and went up there and built it. We also went up there to start a bleaching operation. They wanted me to stay up there, but I didn't want to go to Ketchikan. Anyway, that was one of my first research [projects]. We had a bunch of engineers we were training to operate the plant, too. After that I came back down to Bellingham and worked on various research projects.

LEWIS: That's the list over there that you were showing me?

BLACKMORE: Oh, a whole bunch of things, yeah. You had to understand what a pulp mill is all about, really. We had a very unique process in Bellingham. It's called acid sulfite pulping process. You probably weren't here when the pulp mill in Everett was operating. In the kraft process, they burn the spent liquor to recover the chemicals, and the smell [goes] for ten miles around… terrible smell. The acid process doesn't do that. Anyway, to start, [do] you know what pulp is? It's the fibrous material they get from trees, mostly softwood trees. As the log goes in or the chips go into the mill, it's fifty percent moisture. If you de-lignify it and take – the lignin is what binds the fiber together, that's about fifty percent, too – so you end up with a quarter of the weight of the log [that] is fiber product and a quarter of it is non-fiber material, mostly lignosulfonate. The lignin, which binds the fiber together, has been sulfonated, and it's essentially in a soluble state – not a true solution but close enough.

Now, in Sweden, in Norway, they used that. Spent liquor, they called it – they used it to stabilize road beds. They couldn't think of anything else to do with it. In Bellingham, the manager of the mill at the time, the president of the company, was Erick Ekholm. He decided that it cost us just as much to make that stuff which was being dumped in the bay as the product was selling. So he started a research department to find uses for it. At the time, the government had financed the building of an alcohol plant to ferment the fermentable sugars that were in this spent liquor, and they made quite a lot of alcohol there that the government needed during the war. And, of course, after the war the alcohol plant kept on operating. But even after you take out the fermentable sugars, which are generated by a degradation of the cellulose materials – even after you take the fermentable material out, you still have a lot of lignosulfonate left. Well, the prime purpose of the research department at that time was to find a use for the fermented lignosulfonate. Several hundred tons a day is a bit tough to get rid of.

One of the fellows in our department, Adolphson, was working on the effect on the rheology of clay that's used in the drilling mud when you drill an oil well. In an oil well, initially, the oil was right close to the surface, like in Pennsylvania – all the oil you wanted was pretty handy. [With] any drilling equipment, shallow wells would produce oil. But this got spent out, so they had to start drilling deeper. The trouble is that when they drill deeper, you have got a whole bunch of mechanical, technical problems to solve. One is that you have the bit, and you start drilling down, and the drilling bit has to be lubricated with something, and the cuttings have to be brought out of the bore. So they have a pump which circulates what they call the drilling fluid down there and back up again, and then they take the cuttings out and recycle the mud over and over again. They used a clay material which had thixotropic properties. That is, when it's stationary it gels, and when it's moving it becomes fluid. So theoretically when you have cuttings and you stop drilling, you want the cuttings to stay suspended. You want the fluid to be immobile, and then as soon as you start drilling again you want it to be fluid.

So they found a material. Let's see now, I'm trying to think of the name now. Quebracho: it's an extract of a South American wood which would control the rheology of this drilling fluid so they could drill a fairly deep well. But the trouble with drilling deep wells is [that] the deeper you get the hotter it gets. This quebracho started decomposing, so it limited the amount of how deep you can go with the well. So we started experimenting with lignosulfonates. We found that lignosulfonates, when modified by chrome oxidation and the addition of iron – actually it's an iron chrome lignosulfonate at that point – would withstand much, much higher temperatures than the natural quebracho. But the trouble was that people drilling oil wells aren't about to risk anything on experimental products. All this testing was proved in the lab, but that doesn't mean anything to people running oil wells. We found a man called Roy Dawson who was well known to all the well diggers. He sold them chemicals routinely, and he had their confidence. And we told him, we explained to him the product we had, and we had a name for it: Q.broxin™, which is very close to 'quebracho', became a trade name. It would probably double their ability, their production. They trusted him, and we did a deal with him. I think we gave him two cents a pound, or something like that, commission for every pound he sold, and he became a millionaire in a very short time. He established his own chemical company after a year or so. Anyway, it got accepted, so the money coming in from that one product financed all kinds of research after that.

Going along with that, we found that the lignosulfonate could be modified in various ways. Let's take cement, for example. With cement you want to have a minimum amount of water. The more water you have the weaker it is, but the trouble is it gets too hard to work. If there is not enough water, it won't flow properly. We found that lignosulfonate would reduce the viscosity so you cut down significantly the amount of water used, and you end up with a stronger concrete. Along those lines, it's the same with making wallboard. The less water you have the cheaper it is to – you have got to dry those wallboards, put them on dryers… and it worked well in that, too. So that's one application. And then they found other applications in agriculture. Trace elements are very much needed, and usually they are in the form of common salts, which are not always the best way to provide them. We found that we could make lignosulfonate in which these different trace metals were complexed and readily absorbed or taken up by the plant material. We had material we called Multi-KEMIN. It's lignosulfonate containing various trace elements. And you had special ones like iron multi-KEMIN; that is where you have an iron deficiency in the plant. And all the various ones were custom made to provide just exactly the way you want, and they're much cheaper than the alternative.

Let's see… we're through applications? There's one project which I was particularly interested in. I'm going to show you a sample pretty soon. We developed a magnetic fluid; that is, it responds to magnets, and there are some… This type of material is enormously expensive, and it's used in speakers, I believe, but I'm going to get a sample for you here. In the seed industry they have it on the basis of purity – weed seeds and dead seeds. Absolutely pure seed is sold at a premium price. A lot of seed processing is done down at Mt. Vernon. They've got… I. P. Callison, I think, the name of the company is that does that. There are a lot seeds grown in Skagit County, cabbage seeds and others. Anyway, I was examining seeds and I found that if you tumble these seeds in a drum and sprayed this FML in there, the FML would soak into the contaminant material – mostly clay and soil. It would also absorb into the nonviable seeds. They're cracked; if you look under a microscope you can see they're cracked, and the weed seeds generally have a hairy appearance to them. It stuck to them, too. And – if I can find my work on that – tumble these seeds in a drum and pass them over, on a belt, a big rotating magnet with a doctor blade on one side. All the dead seeds, nonviable seeds, and debris went to the magnet and got scraped off. I got a picture of it somewhere; I'll show you. We found 100% efficiency for cleaning seeds. I don't know where that went. We had a strike at the mill at the time, and I wasn't able to pursue it anymore, but the concept was there, and it was very effective.

LEWIS: You stopped making it because of the strike at the mill?

BLACKMORE: Well, the salaried people had to operate the mill. So [laughs] we were all working twelve-hour shifts while the strike was being settled or negotiated.

LEWIS: What year was this?

BLACKMORE: I've forgotten. I could find out for you. Anyway, all the salaried people had to run the mill, so there was no research getting done. But later on some of the engineers over in the sales department did do some seed cleaning commercially. That's just one thing. I'm sure there's going to be a use for this. Another thing was involving agriculture. In California and various places – I don't think Texas does – in California where they're growing rice, they grow it in rice paddies. They flood these paddies, and they put the rice in there. If they put the rice in there as is, it just floats to the surface: no good. So it has to go to places where they add moisture to it to soak it so all the seeds can go to the bottom. It's very critical: if you soak it too much, it starts germinating right away and [that's a] problem. If not enough, it will float on the surface. I did some experiments in which I treated the rice seed in a rotating drum with a high-density calcium sulfate densite. So these little seeds – they look like they're actually spear-shaped – they're very dense and go right to the bottom right now. So you don't need any preconditioning. You just treat the seed with this densite, and it goes right to the bottom. And also incorporate any plant nutrients you want along with it, so you get seed's own nutrition. I never did anything with that because the strike was going on. I don't know if that was accepted or not.

LEWIS: How long did the strike go for?

BLACKMORE: Oh, a long time, all through the winter. [Laughter] It was terrible. So anyway, along those lines, I should have thought these things out before I…

LEWIS: Oh, it's perfectly okay, sir. I do have a question, however. You mentioned… the chemical production with the FML – that's correct, right? – and with the densite, that your research was being interrupted by strikes.

BLACKMORE: Oh yeah, at a standstill. I worked in the byproducts department making this.

LEWIS: Was that common to… I mean, for strikes…?

BLACKMORE: No, it was the first strike we ever had. But Georgia-Pacific was running the place when Georgia-Pacific took over from Puget Pulp.

LEWIS: So there were no strikes that you can remember? When you worked with…

BLACKMORE: Oh never, never. That's the only strike. And the family atmosphere at Puget Pulp was such that we would have worked for nothing if necessary, if the mill was in trouble. Everybody knew everybody and it was a family operation. But as soon as GP took over… Of course, you're a number in a giant corporation. That's the funny thing. We had one of the vice presidents from Atlanta come in one day looking the place over, and he came into my lab. I was showing him what I was doing. I said, "This is FML," and showed him the FML. "Oh, I see that," he says. "Be careful," I said, "that will jump out." So he put the magnet right there [gestures] and it jumped all over his white shirt. It won't come out. It stained it black. He was forewarned, though. [Laughing]

LEWIS: This change from the Puget Sound Pulp and Timber to Georgia-Pacific, how would you gauge the reaction in Bellingham when the change occurred?

BLACKMORE: Well, you're part of a big company – the "Growth Company" they called themselves at the time. See, Puget Pulp had a forestry program – sustained yield – that they grew trees like a crop. You grew them as fast as you used them – sustained yield. And they had various forest holdings around the Northwest. With a big company, of course, eventually they upped production and they wanted more and more raw material. For a while there, they were importing woodchips from Chile. Actually, a sustained yield is the way to grow. You grow a crop… it's like making bread. You grow the wheat and make the bread. If you didn't grow enough flour, then you wouldn't make enough bread, so eventually you deplete your resources, which is a bad thing to do. Anyway, it was a big company, and big companies are more impersonal. They have to be, I guess. It wasn't as bad as some of the companies now; at least we had benefits and vacation and medical. But you had to be productive. Later on, they sent people out to determine the efficiency of the plant. They sent one guy out; his object was to see how fast the mill would run, how much production it would put out. He dressed himself up in coveralls to go around the mill and asked the different operators, "How fast does the machine run?" And, of course, then they determined what the maximum output would be from the same facility. Economically that's the way to do it, supposedly. But the trouble is, when you run things flat out, things break down. I don't know what the outcome of that was. But anyway, when you get a company which is in the growth process, growth mode – and the object of any company, of course, is to make money – there is a less personal relationship with the employees.

I think there's something else. Oh, another thing. One of the projects I was working on was working with Dupont and their dye department. Certain dyes, like dying synthetics – viscose or nylon or any synthetic fiber – there were particular processes using a direct dye. That is, you have an aqueous medium, and you put this dye and the fabric in there… not the fabric, but the yarn, and that directly absorbs. And they put dispersing agents in. There was a [inaudible] material made by a different process which had been used by them as a dispersant. I was developing a material from our raw material to be compatible with them. I did a lot of work on that – dispersed dyes. I noticed that tying on a tube – a kind of a plastic tubing in the lab. I was working with a dispersed red sixty – a particular one that they were interested in – and all my plastic work turned red. It didn't bother anybody. But later on – we had morning meetings everyday, with the heads of different research departments. Every morning we had meetings to discuss the projects we were on and had input. One day the research director said, "We have a problem." We were making this pulp for Eastman Kodak, photographic paper, and they just shipped carloads back, which is a lot of paper. They said, "There are specks showing up when the film is developed, and they can't use it." Nobody knew what these specks were or where they were coming from, so we analyzed it and found little pieces of plastic, chewed-up plastic material, which went through the pulping process. And we found out the source: they were importing chips from up in British Columbia. These big trucks were used to haul garbage from Vancouver up to this place, and then they would carry on and pick up these wood chips and bring them to Bellingham. Well, these chips had been through big chipping machines, and they had little pieces of plastic – bottles, [things] like that – you couldn't even see it. So we were in our morning meeting and we've got a real problem here. We got these little specks of plastic in here and you can't see them under a microscope. You can't analyze every piece of product. I remembered that everything turned red when my red dye – any synthetic material. I made some hand sheets up, put some of this red dye in there, and bingo! All the pieces of plastic showed up. And when you put them under ultraviolet light, even more so. So it was a good way of finding out. We saved our bacon that way because we tested all the product this way, making a little hand sheet for every batch and that was a good… I mean, you feel like you're doing something useful.

LEWIS: Working on these projects and being in such close proximity with so many chemicals, did you ever have any safety concerns?

BLACKMORE: [Laughter] I got a picture of me somewhere. I made a lot of my own equipment – glass blowing and [things] like that – and I actually built a lot of my own equipment. Let's see, [indicating photograph] that's Doctor Melnychyn: he's a scientist working with the Canadian government now. [Laughs] Here we go. One day, I was doing an ether extract in the hood on a Mag-Mix – about a liter of ether in there. All of a sudden it bumped. And the flask jumped up and landed on the stirrer and broke a whole liter. I had three layers of safety glass between me, and it blew up. It blew all that out. We had a false ceiling. It blew the ceiling out and went into the next lab, pressurized that and blew all the glass between the divider into my lab. But, meanwhile, it blew me to the floor, so all these glass shards went over my head. [Laughing] But I had a sliding door there, and I couldn't get out of there. It blew the door off the hinges. That's me after the accident. [showing a picture and laughing].

LEWIS: You look concerned.

BLACKMORE: Well, see, it blew the ceiling out [inaudible]. Made a mess of the place, I'll tell you. Oh, this is a picture of my seed cleaner. See that? I built this machine myself, and this feeds the seeds onto this belt, and this is after they've been treated with FML. Once they were magnetized, they got picked up by the magnet, and the doctor blade dumped them off into a tray. So that's the practical application of that.

LEWIS: Did accidents like that happen often? Where you had the ether explosion?

BLACKMORE: Oh no, just once! [Laughing] Well, I worked with the chlorine and caustic, and some of the products I developed were anhydrous mixtures of concentrated sulfuric acid and phenol – all these nasty chemicals.

LEWIS: They had adequate safety equipment to protect you guys?

BLACKMORE: Yeah, but when you're in research you very often go outside the normal boundaries. There's our crew operating the plant during the strike [Laughing, showing picture]. That's the byproduct plant. That's Doctor Neal, that's Dick Perry, that's me, that's two other guys – I can't remember the names of them.

LEWIS: What year is this right here?

BLACKMORE: I can find out for you. Anyway, these are just photographs.

LEWIS: I actually looked at a couple of clipping files – you mentioned the chlorine – and read that they had several chlorine leaks that were a cause of concern.

BLACKMORE: Oh, not – we had one bad one, after I retired, at the chlorine plant. One of my jobs – after we designed the bleach plant, we couldn't get anybody to operate it. That's Doctor Lansinger. She works for some bio-med company back east now. This is way back when. That's my analytical department [showing pictures].

LEWIS: Were you acting as a supervisor? Did you have people working for you?

BLACKMORE: No. Well, just one assistant, that's all.

LEWIS: How would you gauge the working relationship in terms of other people in the department?

BLACKMORE: Oh, very good.

LEWIS: Did you have any idea of the total number of people that did work in the department?

BLACKMORE: Well, we had three floors. Have you been down at the plant, seen the lab building? We had three floors. The bottom floor is analytical – quite a few people there – the other two floors were research. I was in the second floor lab.

LEWIS: You said the first floor was analytical?

BLACKMORE: Yeah, analytical and testing, [things] like that. The second floor was research, and the third floor was research, too.

[Mrs. Blackmore interjects into the interview, discussion with her has been omitted.]

BLACKMORE: That's when they closed the lab [showing article about lab closure]. The lab moved to Tacoma. I said, "I'm not going," so they sent the vice president out to ask me if I'd stay on as a consultant from Bellingham.

LEWIS: The vice president of GP?

BLACKMORE: Yeah. So he asked me how much money I wanted [laughing].

LEWIS: Do you mind if I ask why you decided not to go to Tacoma?

BLACKMORE: Well, I was in a year of retiring anyway, and you have to sell up here and go down to Tacoma and then… I didn't like working…it was the industrial part of Tacoma, Commencement Bay. People had to commute an hour or so everyday back and forth to work. There's no place to live there – all the way from Shelton or Puyallup or somewhere like that. It's awful working conditions – not working conditions but commuting. Anyway, some of the people did go. Like some of the guys had houses in Edgemoor; they went down there. Eventually they closed that place down. They came back to Bellingham, and they couldn't afford the houses they'd sold because the prices had doubled.

LEWIS: That's too bad.

BLACKMORE: This is very disjointed, this whole thing. You can't make heads or tails of it. Earthquake in Bellingham – remember that? You probably weren't [inaudible]. Oh, this is… you might want to see this. You can take it with you if you want to. Sixty-five years, from 1926-1991.

LEWIS: I would definitely like to borrow that. I'll return it.

BLACKMORE: There's me. I got my picture in there.

LEWIS: [Laughing] You seem to have your picture in the paper quite a few times.

BLACKMORE: Oh yeah, a lot of times, yeah. That's [name omitted]. He was a really good chemist, but he had a drinking problem, and he died early.

LEWIS: I actually saw an article that talked about GP first offering counseling for alcoholism.

BLACKMORE: Is that right?

LEWIS: Yeah. It said they started offering counseling for that.

BLACKMORE: Oh, they could have.

LEWIS: Did that strike you as a problem, at the plant?

BLACKMORE: No, not in my department; just a very few people. That's me again. I see you saw that picture before. This is May the 20th, '55. [Gesturing to picture] See the price of wood for a fireplace? Two dollars a cord? It's a hundred and forty dollars a cord now.

LEWIS: That's one way to really gauge history.

BLACKMORE: You can borrow that, too, if you want to. There's another one. Hey, I am here again I think. That's me. I'm at work again. As long as you're interviewing me and want to know the history.

LEWIS: Of course. They always have you working in your pictures it seems like.

BLACKMORE: Oh, I'm always working.

LEWIS: It's always a work picture.

BLACKMORE: Is that the same one as this? I don't think so. Oh, that's of Dr. Neal.

LEWIS: I have one question I would like to ask. It's more of a general question. How would you gauge the public's attitude in Bellingham towards the plant through the years?

BLACKMORE: In the old days, Bellingham was a functional city. It was here for a reason. It had the fisheries, it had all the wood industries, a cement plant, a coal mine, and a pulp mill. All these things were what made it go. It wasn't a tourist town, it wasn't a… [laughs], but the people here, they all knew each other. It was a very nice community. That's what impressed me the first time we came to Bellingham, what nice people they were. You could go to any store in Bellingham, and you'd see something you want: "Oh, take it home and see if you like it, pay for it in 90 days." Yeah, trusting; nobody locked doors. There's a story about the plastic…

LEWIS: And you see that as having changed as the years have gone by.

BLACKMORE: Oh yes, [laughing] nobody locked their doors. There was no crime in Bellingham. You want to try to take these things…?

LEWIS: I do, actually, if I could. I would have them back to you very shortly.

BLACKMORE: There's a lot of duplication here. You need this or not?

LEWIS: Yes please, everything you'd be willing to. I could make copies and get it back to you right away.

BLACKMORE: Okay.

LEWIS: Another question: what were some of the more difficult moments when you were at the plant?

BLACKMORE: Well, operating during the strike was a problem because you had to work twelve-hour shifts. They'd send in meals. They'd get meals from the Black Angus, for example. By the time we got them – we called it the Black Anguished because [laughing] it was so horrible. Oh pizza, old pizza, and [things] like that, you know. It was right through the middle of winter. And just a skeleton crew was operating the whole mill and course it was… The rest of it – I enjoyed the challenge. There was never… If you don't like the job you're doing, you shouldn't be doing it. And people all knew each other, liked each other mostly. [Referring to a comment made about the number of theatres in Bellingham by Mrs. Blackmore:] Oh, they had all kinds of theatres and restaurants – I think it was downtown. I think there were two traffic lights in the whole town. You wanted to go down town, you drove down, Montgomery Ward's, Sears, Penney's, and Woolworth's stores. [Referring to a comment made about the public library by Mrs. Blackmore:] Do you remember Andrew Carnegie? Andrew Carnegie established a network of libraries throughout the whole country – a very good thing to do

– and one of them was in Bellingham on the rock near where the Mount Baker theatre is now. They built the present library after that. I was in the JC's at the time and I helped move the books from the old library to the new library. That's my civic duty. [Laughing] They had the Apollo, the Grand, the American Theatre, the Mount Baker Theatre. Bellingham has changed tremendously, something I hoped it wouldn't do. It's been Californicated.

LEWIS: What would you say were some of the more important historical events at the plant?

BLACKMORE: Well, first of all, Eric Ekholm was an engineer from Sweden. He was a good engineer and a very practical man. He did a lot of things in the plant. He invented the Bellingham Barker: that's where they take a whole log in…

LEWIS: I have heard of the Bellingham Barker, yeah.

BLACKMORE: And we proceeded slowly with the unbleached pulp mill, which we started up. It's just like kraft paper, you know that kind of color, unbleached. And then we built a bleach plant. We worked in the lab and developed the process to use, to help them process. We built that. I think the tissue mill was here first or about the same time, I don't know. Bellingham Paper Mills or something, I forgot what it was called at the time. [Addressing Mrs. Blackmore:] Remember what the tissue mill was called – Pacific Coast Paper Mills? I've forgotten. Anyway, it was very convenient to have the pulp in a slush form to pump over to the paper mill because then you didn't have to re-disperse a dry product. In the pulping process, it's of interest to know what the pH of the cooking acid is during the processing. If you get too low, you get decomposition. Anyway, I devised a way of measuring the pH. You can't just stick a pH electrode into the thing at one hundred forty degrees… so I devised a method of pumping the liquid through a cell and measuring the pH outside. But you know what the inside pH is by taking liquid out and re-circling it back. Anyway, [referring to pictures] you can have that copy and then this one.

LEWIS: I'm going to make copies of all of [these].

BLACKMORE: That's the alpha cellulose. I got the Shibley award for that one.

LEWIS: What would you say was your most memorable moment, or memorable time at the plant?

BLACKMORE: I don't know. We were just one big happy family for a long time. Oh, the recognition you get from what you'd done. See, we had morning meetings, and the outside world knows nothing of what you're doing. Recognition by your peers is the most important thing, really, because nobody else knows what you're talking about. And that stimulates you, and that's what it's all about, really – in research anyway.

LEWIS: Well, you sure have a lot to show for it, a lot of awards.

BLACKMORE: This is something I am most concerned about. There was a problem in places where there's a lot of dust, such as grain elevators and coal mines. You get dust explosions. You get dust in the atmosphere, and you get a static charge – it blows the place like dynamite. It will just destroy everything. They blow up grain elevators, destroy coal mines. My interest was to use lignosulfonate as a dust suppressant. The trouble with lignosulfonate is that it doesn't wet hydrophobic materials like coal dust. It's an aqueous product, and it will wet stuff that will absorb water or have some affinity for it. But I was concerned about coal dust. There are a lot of coal dust explosions, several going on lately, and it happens in the transfer points, in the generating plants. They unload the stuff from coal cars. If you get just the right conditions – spontaneous or static charge or overheated bearings on a conveyer belt – it will set it off, and there are millions of particles, and it just blows up. I developed a product which would wet both hydrophobic and hydrophilic materials equally well, and I gave a presentation at an international meeting of scientists in Baltimore. What I did was… I got a paper here, I think. I did all the chemistry involved in… Here, this is the paper I gave.

LEWIS: When was the presentation you gave?

BLACKMORE: This one? This is September '85, and what I did was, in the lab, I built a little conveyer belt with coal dust on it. I took photographs of the treated and untreated… [referring to picture] See this… and this is the…

LEWIS: That's very noticeable.

BLACKMORE: And I was so concerned about this. This was going on, this is… anyway… Oh, I was wondering what happened to this? I had a breakfast meeting the other day with a bunch of retired executives that are still in contact with GP and knew what was going on. I said, "I'm concerned about this, and we could use this product," – lignosulfonate plus a glycol ether which makes it wet hydrophobic dust. And they said, "Oh, we sold that technology to some other company." Well, what a stupid thing to do! I mean, here's something you can make money on and save a bunch of lives. So I don't know who got the technology, but I was thinking about writing to my congressman and trying to reactivate it because it's really cheap and easy and effective. This last explosion they had, I think it happened on a conveyer belt. If you get a conveyer belt's bearings overheated and all that dust there… once you get that going it ignites and the whole damn mine goes up. It's just ridiculous. So I was thinking of writing to somebody in the government so that they'd do something about this because there've been too many mine accidents lately. Let's see, you can have that.

LEWIS: So you just combine ether with this and it…

BLACKMORE: It's a glycol ether [inaudible]… I've forgotten.

LEWIS: It's like the dust is almost nonexistent.

BLACKMORE: Yeah, it just brings it right down. Just spray a bit on the… and spray it around the air and all the dust globs. But that's an important thing and I'd hate to not see it being put to use.

LEWIS: Do you not know what the other company was?

BLACKMORE: I don't know who it was. I was talking to one of the guys who has his own business now, but he knew what was going on with these things. There's a whole bunch… I haven't covered. I don't know; I can't remember everything.

LEWIS: Just out of curiosity, what do you think is going to happen to the waterfront now and in the future?

BLACKMORE: Isn't that funny? I'm a pilot. I was meeting with the port commissioners, and they have it all laid out. They've got this lagoon that GP used to store there, and they have aeration to reduce the biological oxygen demand – BOD. It's an ideal place, as far as they're concerned, for boat moorage. And they had it all planned out: what size vessels were going to be in there, at this meeting. I heard somebody on the radio talking the other day, "That wasn't done without public input…" Actually, the port negotiated with GP to take all this land. I don't know what the money deal is, but it's pretty good for the port. But the port was the prime mover in this transition and actually the tissue mill is on lease property now. The port actually owns the property. I think the port can do what they want with it, more or less… But I don't know. People want to make parks and things like that. Actually, when I came to Bellingham I accepted it for what it was. [Here] you have this nice Whatcom Creek coming down and this waterfront. In Europe, for example, two things would have happened. One, it would be industrial, like any of the big sea ports, or it would be a seaside resort. It would have a promenade and sandy beaches. I could see Bellingham either way. But Bellingham was already a functional city with all the businesses going on, everybody's happy. But what [some people] want to do [is] to make it San Francisco North, I guess, with all the trails and all those nice things, and make it a tourist destination. But it depends on what you want. I don't think Bellingham is going the right way right now. It's too congested, people living in all these beehive places, traffic jams everywhere, and all the crime that comes with it, and hangers-on. The trouble is you can't stay the same.

But the funny thing is, when I was stationed in England in a little place called Tuddenham where we had our airbase… That little village – it was a few miles to Cambridge, New Market, and bigger places – it hadn't changed in a thousand years. It had a village green, it had a well, it had a stream going through, the flour mill that had a wheel going round. The guy ground the flour, baked the bread. We were living in there for a while; then my wife came over for a short while. She'd go to the baker, and say, "I would like a loaf of bread tomorrow." They'd make it for you. They didn't have any electricity, and they didn't want any. There was this little farmhouse we were staying in for a while. The women [had] no electricity, no running water – they had to go to the well, just like in the Middle Ages. They were happy, I guess. Anyway, she always wanted an electric range; she'd seen them in the big cities. So one Christmas her husband bought her an electric range. There it was sitting in the kitchen, no electricity [laughing], but she had an electric range. [That was] the mentality of some of these people. While we were there, we had to go take a trip to Cambridge to a hotel to have a bath every so often. … You had a bowl of cold water and a jug to… No, I'd bring hot water home in a thermos from the airbase to… It only happened for a few weeks, but after that we moved to a country hotel. But the people there… it was still the same. Going back after the war, these nice little villages, that were just primitive, all had TV antennas poked up, and they had electricity and running water. They got right into the twentieth century, I guess, all at once. Very drastic change for them.

But people sometimes are happy with what they've got. Some people never… You often wonder – I've had business trips to Minneapolis, places like that, in the middle of winter – why would people want to live in this terrible climate when you can go to a sunnier place? But the people live there, and they like it. They grew up there; it's what they like. On the other hand, you go down to Houston on a business trip – we had a division down there – Oh! The heat, the humidity! Oh, and the bugs, and all those nasty things… I said, oh, I don't want to live down here! My wife always thinks it's nice down south. My son was living down in the Gulf there for a while, and they get these tornadoes. It's nice – when the wind is nice, it's nice. When the wind isn't nice, it's terrible. But Bellingham was a very nice place, used to be. Still is nice compared to some places. … Have you ever been to Baltimore?

LEWIS: No.

BLACKMORE: They have what they call Inner Harbor. It's right on the waterfront there, and they have totally redeveloped it. It used to be a slum area down there. They've got fancy hotels… The incentive to get people to move into that area, they gave people houses, these brick houses already there, for a dollar if they'd move in and fix them up.

LEWIS: A dollar?

BLACKMORE: Yeah. They needed a lot of fixing up. It's the kind of place people wouldn't want to live normally, but since the city developed the inner harbor it's a really nice place. People started moving in, fixing up these houses, for some nominal fee. Anyways, they'd move into these houses… The same thing happened in London, down on the docks in London. They were dockworkers' houses and they weren't in a very good area, really. Then people decided they would like to live down there, and they drove the real estate prices up, of course. They fixed places up, made nice little places out of them. Like here. You could buy waterfront property anywhere around here for ten dollars a waterfront foot. But if you've got a waterfront lot now, it's a million dollars [laughing]. It's just what people… what the market demands.

LEWIS: Home values are really getting up there. Is there anything else you can think about?

BLACKMORE: No… you can take this with you [indicating folder].

[END OF TAPE]